



## In the United States Patent and Trademark Office

Application No. 10/016,661  
Filed: 10/29/2001  
Title: Long Elements Method for Simulation of Deformable Objects  
Applicant(s): Remis Balaniuk et al.  
Examiner: Not assigned  
Art Unit: 2672

Mailed 03/07/2002  
Santa Clara, CA

### Information Disclosure Statement

Commissioner of Patents and Trademarks  
Washington, District of Columbia 20231

Dear Sir or Madam:

Attached is a completed Form PTO-1449 and copies of the pertinent parts of the references cited thereon. It is requested that the document(s) on the enclosed form be made of record.

#### Part I (Authority)

This statement is filed pursuant to:

(X) 37 C.F.R. § 1.97(b).

This information disclosure statement is filed either (1) within three months of the filing date of the national applications; (2) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application; or (3) before the mailing date of a first office action on the merits, whichever event occurs last.

Accordingly, this information disclosure statement requires no fee and no certification.

( ) 37 C.F.R. § 1.97(c).

This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing date of either (1) a final action under 37 C.F.R. § 1.113 or (2) a notice of allowance under 37 C.F.R. § 1.311.

Accordingly, this information disclosure statement requires either the fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c) (\$180), or a certification according to 37 C.F.R. § 1.97(e).

( ) 37 C.F.R. § 1.97(d).

This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(c).

Accordingly, this information disclosure statement requires the petition fee specified in 37 C.F.R. § 1.17(p) to consider an information disclosure statement under 37 C.F.R. § 1.97(d) (\$180), a certification according to 37 C.F.R. § 1.97(e), and a petition requesting consideration of the information disclosure statement.

#### Conditional Petition

It is respectfully requested that this information disclosure statement be considered, good cause being presented in Part III herein (certification). please treat this paper as the required petition.

If this statement crosses in the mail with an office action, or is otherwise not in the indicated category of 37 C.F.R. § 1.97, it is respectfully requested that this statement be treated in the next appropriate category and made of record.

To the extent required, please treat this paper as a conditional petition for acceptance of the information disclosure statement.

## **Part II (Payment)**

A check is enclosed as indicated:

- No fee is due.
- The fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c) is enclosed (\$240).
- The petition fee specified in 37 C.F.R. § 1.17(i)(1) to consider an information disclosure statement under 37 C.F.R. § 1.97(d) is enclosed (\$130).

## **Part III (Certification)**

Pursuant to 37 C.F.R. § 1.97(e), I certify:

- No certification is necessary.
- (1) Each item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the statement.
- The "communication from a foreign patent office" referred to in the certification is an International Search Report, possibly issued by the U.S. Patent and Trademark Office in its capacity as an International Search Authority or International Preliminary Examining Authority.
- The "counterpart foreign application" referred to in the certification corresponds to an ancestor or descendent application of the application for which this information disclosure statement is filed.
- (2) No item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, or, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c), more than three months prior to the filing of the statement.

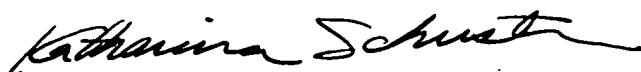
## **Part IV (Additional Statement)**

An additional statement regarding these items of information ( ) is, ( X ) is not, enclosed.

Copies of the cited art ( X ) are enclosed, ( ) are of record in parent application Serial No. \_\_\_\_\_ and will be provided if the Examiner deems it convenient.

Respectfully submitted,

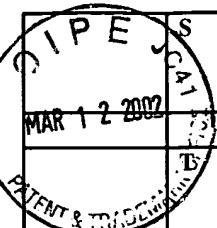
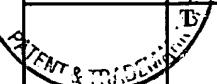
Dated: 03/07/2002



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FORM PTO-1449U.S. DEPARTMENT OF COMMERCE								ATTY. DOCKET NO. S00-226/US	SERIAL NO. 10/016,661			
<b>LIST OF PRIOR ART CITED BY APPLICANT</b> (Use several sheets if necessary)								APPLICANT Remis Balaniuk et al.				
								FILING DATE 10/29/2001		GROUP 2672		
<b>U.S. PATENT DOCUMENTS</b>												
EXAMINER INITIAL		DOCUMENT NUMBER			DATE	NAME			CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
A		5	8	7	7	7	7	3/2/99	Colwell	345	473	4/7/97
B		6	2	5	9	4	5	3	Itoh et al.	345	423	10/13/98
C		6	2	9	5	4	6	4	Metaxas	600	407	
D												
E												
F												
G												
H												
<b>FOREIGN PATENT DOCUMENTS</b>												
		DOCUMENT NUMBER			ISSUE DATE	COUNTRY			CLASS	SUBCLASS	TRANSLATION	
I											<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
J												
K												
<b>OTHER PRIOR ART</b> (Including Author, Title, Date, Pertinent Pages, Etc.)												
L		Gacin S. P. Miller; "The motion dynamics of snakes and worms;" Computer Graphics, Volume 22, Number 4, August 1988										
M		Moten Bro-Nielsen et al., "Real-time volumetric deformable models for surgery simulation using finite elements and condensation;" Eurographics'96/J. Rossignac and F. Sillion, Volume 15, 1996, Number 3										
N		William R. Mark et al.; "Adding force feedback to graphics systems: issues and solutions;" Computer Graphics Proceedings, Annual Conference Series, 1996										
O		Yan Zhuang et al., "Haptic interaction with global deformations;" Proceedings of the 2000 IEEE, International Conference on Robotics & Automation, San Francisco, CA , April, 2000										
P		Murat Cenk Cavusoglu et al., "A laparoscopic telesurgical workstation;" IEEE, Transactions Conference on Robotics & Automation, Vol. 15, No. 4, August 1999										
Q		V. Vuskovic et al.; "Realistic force feedback for virtual reality based diagnostic surgery simulators;" Proceedings of the 2000 IEEE, International Conference on Robotics & Automation, San Francisco, CA , April, 2000										
R		Michael Downes et al.; "Virtual environments for training critical skills in laparoscopic surgery;" Medicine Meets Virtual Reality, IOS Press and Ohmsha, 1998										

	Diego d'AULIGER C et al.; A haptic interface for a virtual exam of the human thigh;" Proceeding s of the 2000 IEEE, International Conference on Robotics & Automation, San Francisco, CA , April, 2000	
	Stephane Cotin et al.; "Real-time elastic deformations of soft tissues for surgery simulation;" IEEE Transaction on Visualization and Computer Graphics, Vol. 5, No. 1, January-March 1999	
	M. Bro-Nielsen et al.; "Real-time volumetric deformable models for surgery simulation using finite elements and condensation;" In Proceedings of Eurographics' 96-Computer Graphics forum, pages 57-66, 1996	
<b>EXAMINER</b>		<b>DATE CONSIDERED</b>
<b>* EXAMINER:</b> Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.		